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| 10/520,201 | 01/04/2005 | Ronaldus Maria Aarts | NL 020597 | 2699 |

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| EXAMINER |
|---|
| OLANIRAN, FATIMAT O |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _05 June 2009_.
2a)☐ This action is **FINAL**.　　　　2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-18_ is/are pending in the application.
　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-18_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
　　a)☐ All　b)☐ Some * c)☐ None of:
　　　1.☐ Certified copies of the priority documents have been received.
　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.
　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
　　* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

# DETAILED ACTION

## *Response to Arguments*

1.      Applicant's arguments with respect to claim have been considered but are moot

in view of the new ground(s) of rejection.

## *Claim Rejections - 35 USC § 102*

2.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

3.      Claims 1-3, 5, 8, 10-12, 14, 17 are rejected under 35 U.S.C. 102(e) as being

anticipated by Truman et al (7447631).

Claim 1, Truman discloses an audio system comprising: a post-processor arranged to

alter successive fragments of a decoded audio signal to provide successive fragments

of a post-processed audio signal, the successive fragments of the decoded audio signal

having been produced by decoding successive fragments of a previously-encoded

audio signal (Fig. 1a-1b and col. 6 line 20-37 and col. 6 line 52-61 element 25, 29); a

distortion detector for determining a degree to which quantization noise introduced in

encoding said successive fragments of said previously-encoded audio signal becomes

audible due to said post-processing of said successive fragments of said decoded audio

signal (Fig. 1b and col. 6 line 20-37 and 52-61 and col. 13 line 8-41 element 23, 24);

and a regulator arranged to control said post-processor according to said degree (Fig.

1b and col. 6 line 52-61 and col. 13 line 8-41 element 23, 24).


Claim 2 analyzed with respect to claim 1, Truman discloses wherein the distortion

detector further comprises: a masking threshold generator arranged to provide an

estimate of a masking threshold for said successive fragments of the post-processed

audio signal (Fig. 1b col. 9 line 1-20); and a noise level detector arranged to provide an

estimate of a noise level for said successive fragments of said post-processed audio

signal (Fig. 1b col. 9 line 1-20 and col. 11 line 5-34) wherein said distortion detector

determines said degree to which the quantization noise introduced in encoding said

successive fragments of said previously-encoded audio signal becomes audible

according to a degree to which said noise level exceeds said masking threshold of said

successive fragments of said post-processed audio signal (Fig. 1b col. 9 line 1-20 and

col. 11 line 5-34).


Claim 3 analyzed with respect to claim 1-2, Truman discloses further comprising a

decoder arranged to receive said successive fragments of said previously-encoded

audio signal, to decode said successive fragments of said previously-encoded audio

signal, and to produce said successive fragments of the decoded audio signal (Fig. 1a &

1b).

Claim 5 analyzed with respect to claim 1-2, Truman discloses wherein said masking

threshold generator comprises a psycho-acoustic modeling component arranged to

transform said successive fragments of said post-processed audio signal into the

frequency domain; and to derive said masking threshold therefrom (Fig. 1b and col. 6

lines 20-60).


Claim 8 analyzed with respect to claim 1-2, Truman discloses where said noise level

detector is arranged to determine quantization levels employed in said previously-

encoded audio signal (Fig. 1b col. 9 lines 1-20 and col. 11 line 5-34).


Claim 10, Truman discloses a method of processing an audio stream, the method

comprising: post-processing successive fragments of a decoded audio signal to provide

successive fragments of a post-processed audio signal, the successive fragments of the

decoded audio signal having been produced by decoding successive fragments of a

previously-encoded audio signal (Fig. 1a-1b and col. 6 line 20-37 and col. 6 line 52-61

element 25, 29); determining a degree to which quantization noise introduced in

encoding said successive fragments of the previously-encoded audio signal becomes

audible due to said post-processing of said successive fragments of said decoded audio

signal; and  regulating said post-processing step according to said degree (Fig. 1b and

col. 6 line 52-61 and col. 13 line 8-41 element 23, 24).

Claim 11 analyzed with respect to claim 10, Truman discloses, wherein detecting a degree to which quantization noise introduced in encoding the successive fragments of audio signal becomes audible due to the post-processing comprises: producing an estimate of a masking threshold for the successive fragments of the post-processed audio signal; producing an estimate of a noise level for the successive fragments of the post-processed audio signal; and determining the degree to which the quantization noise introduced in encoding the successive fragments of the previously-encoded audio signal becomes audible, according to a degree to which the noise level exceeds the masking threshold for the successive fragments of the post-processed audio signal (Fig. 1b col. 6 line 51-62, col. 9 lines 1-20 and col. 11 line 5-34 and col. 13 line 32-39).

Claim 12 analyzed with respect to claim 10-11, Truman discloses: receiving the successive fragments of the previously-encoded audio signal; decoding the successive fragments of the previously-encoded audio signal; and producing the successive fragments of the decoded audio signal (Fig. 1a-1b).

Claim 14 analyzed with respect to claim 11, Turner discloses wherein producing the estimate of the masking threshold comprises psycho-acoustically modeling the successive fragments of the post-processed audio signal to transform the successive

fragments of the post-processed audio signal into the frequency domain; and to derive

the masking threshold therefrom (Fig. 1b and col. 6 lines 20-60).

Claim 17 analyzed with respect to claim 11, Truman discloses in which said noise level

estimation includes determining quantization levels employed in encoding the

successive fragments of the previously-encoded audio signal (Fig. 1b col. 9 lines 1-20

and col. 11 line 5-34).

## *Claim Rejections - 35 USC § 103*

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.      Claim 4, 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Truman et al (7447631) in view of Kirkeby (6928168).

6.      Claim 4 analyzed with respect to claim 1-3, Truman does not explicitly disclose

wherein said decoder produces stereo-encoded successive pairs of fragments of the

decoded audio signal and said post-processor applies stereo-widening to said

successive pairs of fragments of the decoded audio signal.

Kirkeby discloses decoder produces stereo-encoded successive pairs of fragments of

the decoded audio signal and a post-processor applies stereo-widening to said

successive pairs of fragments of the decoded audio signal (abstract and col. 5 line 5-

20).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the decoder of Truman with the processing of Kirkeby in order to

produce high quality more spatial sound.


 Claim 13 analyzed with respect to claim 10-12, recites the limitations of claim 4.


7.      Claim 7, 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Truman et al (7447631) in view of Moehrs et al (Analysing decompressed audio with the

"Inverse Decoder"-towards an Operative Algorithm).

Claim 7 analyzed with respect to claim 7, 2 Truman discloses decoder arranged to

receive said successive fragments of the decoded audio signal and to provide therefrom

indications of quantization levels employed in the successive fragments of said

previously-encoded audio signal (Fig. 1b col. 9 line 1-20 and col. 11 line 5-34).


Truman does not explicitly disclose an inverse decoder.

Moehrs discloses an inverse decoder (page 8, column 2, Section Conclusion).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention

was made to modify the noise reducer of Truman with the inverse decoder of Moehrs in

order to be able to recover the encoded compression parameters as taught by Moehrs (abstract).

Claim 16 analyzed with respect to claim 11, recites the limitations of claim 7

8.      Claim 6, 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Truman et al (7447631) in view of Hong et al (5054075).

Claim 6 analyzed with respect to claim 1-2, Truman disclose wherein said masking threshold generator comprises a psycho-acoustic modeling component arranged to receive said successive fragments of said previously-encoded audio signal and to produce successive fragments of a modeled audio signal(Fig. 1b and col. 20-56); Truman does not explicitly disclose to apply a same post-processing algorithm to said successive fragments of the modeled audio signal as said post-processor applies to the successive fragments of the decoded audio signal; to transform said successive post-processed fragments of the modeled audio signal into the frequency domain; and to derive said masking threshold from said post-processed fragments of the modeled audio signal.

Hong discloses apply a same post-processing algorithm to said successive fragments of the modeled audio signal as said post-processor applies to the successive fragments of the decoded audio signal; to transform said successive post-processed fragments of the

modeled audio signal into the frequency domain; and to derive said masking threshold

from said post-processed fragments of the modeled audio signal (Fig. 2 and col. 4 line

25-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the audio system of Truman with the filtering and gain adjustment of

Hong in order to improve the selection of waveform/noise gain control and thereby

improve audio clarity as taught by Hong (abstract).


Claim 9 analyzed with respect to claim 7, 1-2, Truman discloses wherein said noise

level detector is arranged to derive from said quantization levels successive

distributions of noise level for said successive fragments of the decoded audio signal

(Fig. 1b and col. 9 line 1-20 and col. 11 line 5-20),
Truman does not explicitly disclose and to apply a same post-processing algorithm to

said successive distributions of noise level as said post-processor provides to

successive estimates of noise level for said successive fragments of said post-

processed audio signal.

 Hong discloses apply a same post-processing algorithm to said successive

distributions of noise level as said post-processor provides to successive estimates of

noise level for said successive fragments of said post-processed audio signal (Fig. 2

and col. 4 line 25-53).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the audio system of Truman with the filtering and gain adjustment of

Hong in order to improve the selection of waveform/noise gain control and thereby

improve audio clarity as taught by Hong (abstract).


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Claim 15 analyzed with respect to claim 11, recites the method limitations of claim 6

Claim 18 analyzed with respect to claim 17, 10-11, recites limitations of claim 9.


9.      The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Ehara (6334105) (Fig. 1-2). Davis et al (5451954) Fig. 1-2.


### Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is

(571)270-3437.  The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vivian Chin can be reached on 571-272-7848.  The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


FO

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614